APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/657,532	09/08/2000	Jose Olav Andrade	P2443-559	1655

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EXAMINER
CHEN, PO WEI

ART UNIT	PAPER NUMBER
2697	

DATE MAILED: 12/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

		Application No.	Applicant(s)
		09/657,532	ANDRADE ET AL.
Office Action Summary		Examiner	Art Unit
		Po-Wei (Dennis) Chen	2697

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-53</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-53</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>14 August 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Claims 1-53 are pending in this application. Claims 1, 15, 29 and 40 are independent claims.

This action is non-final

The present title of the invention is "Method and Apparatus for Correcting Pixel Level Intensity

Variation".

The Group Art Unit of the Examiner case is now 2697. Please use the proper Art Unit number to

help us serve you better.

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1, 2, 9, 15, 16, 23, 29, 30, 37, 40, 41 and 48 are rejected under 35 U.S.C. 102(b)

as being anticipated by Tomita (US 4,788,588).

Regarding claim 1, Tomita discloses a liquid crystal display apparatus comprising:

A method for providing a consistent visual appearance of one or more pixels of a display

screen with respect to a viewing position by compensating for variations between one or more

perceived pixel level values associated with the one or more pixels and one or more

corresponding pixel level values associated with the one or more pixels, the variations associated

with one or more viewing angles between one or more locations of the one or more pixels and

the viewing position, the method comprising the steps of: establishing the viewing position; and

applying a respective different correction factor to each of the one or more corresponding pixel

level values based on a respective one of the one or more viewing angles associated with the

each ("Provide means for automatically adjusting the luminance or the contrast of a seat back

mounted liquid crystal display panel as a function of the reclining angle of the seat back to

thereby maintain a substantially constant viewing quality for a viewer of the panel" and "the

angle of a reclining seat is detected to control a voltage impressed on an electrode of the liquid

crystal display apparatus", see lines 57-62 of column 1 and lines 42-44 of column 3; It is noted

that while claim recites compensating variations between one or more pixel level values, to one

of ordinary skill in the art it would have been understood at the time of invention that the method

disclosed by Tomita of using variations of voltage impressed will indeed change the pixel level

values and provide different luminance or contrast of the displaying device thus fully meeting the

claim limitation. Therefore, in Fig.4, depending on the visual angle, those curves would use

different voltage value to correct the luminance or contrast. It is further noted that while claim

recites "viewing position" or "viewing angles", to one of ordinary skill in the art it would have

been understood at the time of invention that by changing the reclining angle of the seat back

would provide the means of different viewing position or viewing angles).

Regarding claim 2, Tomita discloses a liquid crystal display apparatus comprising:

Step of applying the respective different correction factor further includes establishing

one or more different nonlinear correction curves corresponding to the one or more locations, the

different non-linear correction curves relating a range of pixel level values to a corresponding

range of corrected pixel level values associated with the viewing position (see Fig. 4).

Regarding claim 9, Tomita discloses a liquid crystal display apparatus comprising:

Applying an analytical function to generate the different correction factor (See Fig. 4; As

can be seen from Fig. 4, different correction factors are generated based on different visual

angles).

As per claims 15, 16 and 23, the statement presented, above, with respect to claims 1, 2

and 9 are incorporated herein.

As per claims 29, 30 and 37, the statement presented, above, with respect to claims 1, 2

and 9 are incorporated herein.

As per claims 40, 41 and 48, the statement presented, above, with respect to claims 1, 2

and 9 are incorporated herein.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   Claims 3-8, 10, 11, 17-22, 24, 25, 31-36, 38, 39, 42-47, 49 and 50 are rejected under 35

U.S.C. 103(a) as being unpatentable over Tomita (US 4,788,588) as applied to claim 1 above,

and further in view of Shirriff (US 6,094,185).

Regarding claims 3 and 4, Tomita discloses a liquid crystal display apparatus comprising:

Establishing the viewing position and one or more non-linear correction curves for each

of the one or more locations relative to the established viewing position ("Even if the screen

visual angle is changed in accordance with a change in reclining angle, the directivity of the

liquid crystal display unit 2 is automatically corrected in accordance with the reclining angle, so

that image quality is not extremely degraded", see lines 45-49 of column 2 and Fig. 4; It is

further noted that in Fig. 4, depending on the visual angle, the non-linear correction curve is

provided to correct the display). It is noted that Tomita does not disclose that this is based on the

one or more received user inputs. Also, displaying a calibration pattern on the display screen;

receiving one or more user inputs associated with the one or more locations responsive to the

display of the calibration pattern. Storing the received one or more user inputs with an

association to a user identity and processing a user input to obtain the user identity and the one or

more stored user inputs associated therewith.

However this is known in the art taught by Shirriff. Shirriff discloses a apparatus and

method for automatically adjusting computer display parameters in response to ambient light and

user preferences comprising:

"An apparatus to automatically adjust, in accordance with a set of user preferences, a

computer display parameter, such as brightness or contrast" (see lines 1-3 of abstract). Also,

"FIG. 5 is a graphical representation of user preference values as a function of light signal

intensity values (V)...Using standard programming techniques, a graphical interface may be

created to present a curve on the display. Standard programming techniques can also be used to

allow a user to manipulate the shape of the curve 80" (see lines 1-7 of column 6; It is further

noted that Fig.5 is considered as a calibration pattern to adjust the intensity values of the

display). And "to determine whether there have been any changes to the user preference

setting...If there has been a change in a user preference setting, then control is passed to the

preference table update routine 46. As its name implies, the preference table update routine is

used to update values in a preference table 42" (see lines 20-27 of column 4 and Fig. 2; It is

noted that to one of ordinary skill in the art it would have been obvious at the time of invention

to understand the different entries of user preference values are used to identify different users,

see table in lines 40-49 of column 4).

It would have been obvious at the time the invention was made to one of ordinary skill in

the art to utilize the teachings of displaying a calibration pattern on the display screen, receiving

one or more user inputs associated with the one or more locations responsive to the display of the

calibration pattern, and establishing based on user inputs by Shirriff to provide the advantage of

"to accommodate each user's computer display preferences" and "provides a user with a great

deal of control over computer images...so that an image appearing on the computer display 24

accurately reflects the appearance of the image when it is printed on paper" (see lines 33-34 of

column 1 and lines 3-9 of column 4, Shirriff).

Regarding claims 5, 6 and 10, Tomita discloses a liquid crystal display apparatus

comprising:

Detecting a change in a relative orientation between a display orientation and the viewing

position ("comprises a detection means for detecting a screen visual angle by detecting the

reclining angle of the seat back", see 45-48 of column 1).

Applying a respective correction factor to each of the one or more corresponding pixel

level values based on the detected change in the relative orientation. Establishing one or more

different non-linear correction curves corresponding to one or more relative orientations between

the display orientation and the viewing position, the different non-linear correction curves

relating the range of pixel level values to a corresponding range of corrected pixel level values

associated with the one or more relative orientations. Applying an analytical function to

generate the correction factor ("Even if the screen visual angle is changed in accordance with a

change in reclining angle, the directivity of the liquid crystal display unit 2 is automatically

corrected in accordance with the reclining angle, so that image quality is not extremely

degraded", see lines 45-49 of column 2 and Fig. 4; It is noted that while claim recites correction

factor to each of the one or more corresponding pixel level values, to one of ordinary skill in the

art it would have been obvious at the time of invention to understand the method disclosed by

Tomita of using variations of voltage impressed will change the pixel level values and provide

different luminance or contrast of the displaying device. Therefore, in Fig.4, depending on the

visual angle, those curves would use different voltage value to correct the luminance or contrast.

It is further noted that while claim recites "viewing position", to one of ordinary skill in the art it

would have been obvious at the time of invention to understand by changing the reclining angle

of the seat back would provide the means of different viewing position. Also as can be seen

from Fig. 4, different correction factors are generated based on different visual angles).

Tomita does not disclose that the correction factor based on the detected change in the

relative orientation is a second one. However, it would have been obvious at the time the

invention was made to one of ordinary skill in the art to utilize the teachings of "automatically

adjust, in accordance with a set of user preferences, a computer display parameter, such as

brightness or contrast" and "FIG 5 is a graphical representation of user preference values as a

function of light signal intensity values" (see lines 1-3 of abstract and lines 1-2 of column 6; It is

further noted that FIG 5 is a different correction curve that is considered as first one and is

produced by user input) by Shirriff to provide the advantage of "to accommodate each user's

computer display preferences" and "provides a user with a great deal of control over computer

images…so that an image appearing on the computer display 24 accurately reflects the

appearance of the image when it is printed on paper" (see lines 33-34 of column 1 and lines 3-9

of column 4, Shirriff).

Also, for claims 7 and 8, Tomita does not disclose determining if the viewing position

and a location of the each corresponds to a first reference location; and interpolating using the

first reference location and a second reference location to arrive at an interpolated correction

factor if the determined location of the each does not correspond to the first reference location.

However, it would have been obvious at the time the invention was made to one of ordinary skill

in the art to utilize the teachings of "A determination is then made as to whether the light sensor

signal can be directly matched into a user preference table…If the light signal does not result in

direct table entry match into the user preference table, then the two closest preference table

entries are identified (block 66)…The next step associated with the operations of FIG. 3 is to

interpolate a user preference value (block 68) between these table entries (see lines 36-67 of

column 4 and lines 1-18 of column 5 and Fig. 3) by Shirriff to provide "an image appearing on

the computer display 24 accurately reflects the appearance of the image when it is printed on

paper" (see lines 7-9 of column 4, Shirriff; It is further noted that while the claim recites the

references locations corresponding to viewing position or the changed relative orientation, to one

of ordinary skill in the art it would have been obvious at the time of invention to understand by

considering viewing position or the changed relative orientation as user preference values, and

the method of interpolation to provide a better light intensity value (see Fig. 5) for the advantage

above).

Regarding claim 11, Tomita discloses a liquid crystal display apparatus comprising:

Reading one or more sensors indicating one or more of: display orientation and viewing

position ("invention comprises a detection means for detecting a screen visual angle by detecting

the reclining angle of the seat back", see lines 45-47 of column 1; It is further noted that while

claim recites "viewing position", this term is broad enough to encompass visual angle used by

Tomita).

As per claims 17-22, 24 and 25 the statement presented, above, with respect to claims 2-

8, 10 and 11 are incorporated herein.

As per claims 31-36, 38 and 39 the statement presented, above, with respect to claims 2-

8, 10 and 11 are incorporated herein.

As per claims 42-47, 49 and 50 the statement presented, above, with respect to claims 2-

8, 10 and 11 are incorporated herein.

5.   Claims 12-14, 26-28 and 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Tomita (US 4,788,588) as applied to claim 1 above, and further in view of Lanier (US

6,400,374).

Regarding claims 12-14, Tomita discloses a liquid crystal display apparatus

comprising:

One or more sensors include one or more of: a display orientation sensor, a viewing

position sensor ("invention comprises a detection means for detecting a screen visual angle by

detecting the reclining angle of the seat back", see lines 45-47 of column 1; It is further noted

that while claim recites "viewing position" , this term is broad enough to encompass visual angle

used by Tomita).

Tomita does not disclose a sensor for sensing the position of a remote device coupled to the viewer, a viewer feature tracking sensor and a camera for generating an image associated with a viewer, and a means for analyzing the image to track one or more features associated with the viewer. However, this is known in the art taught by Lanier. Lanier discloses a video superposition system and method comprising:

A sensor for sensing the position of a remote device coupled to the viewer ("The antenna 6 produces a field which has a characteristic spatial variation, so that the sensor 8 allows detection of the position and orientation of the sensor 8 with respect to the antenna 6. The sensor 8 is mounted at the apex of the bridging portion of a set of headphones", see lines 3-7 of column 8 and elements 6, 8, 10 and 22' of Fig. 1; It is noted that the sensor is coupled to the viewer in Fig. 1).

A viewer feature tracking sensor and a camera for generating an image associated with a viewer and a means for analyzing the image to track one or more features associated with the viewer ("A graphic image system comprising a video camera producing a fisrt video signal defining a first image including a foreground object and a background, the foreground object preferably including an image of a human subject having a head with a face; an image position estimating system for identifying a position with respect to said foreground object, e.g. the head, the foreground object having features in constant physical relation to the position; and a computer, responsive to the position estimating system, for defining a mask region separating the foreground object from said background", see lines 1-11 of abstract; It is noted that the mask region can be considered as a feature extracted associated with the viewer, or the human subject that Lanier discloses).

As per claims 26-28, the statement presented, above, with respect to claims 12-14 are incorporated herein.

As per claims 51-53, the statement presented, above, with respect to claims 12-14 are incorporated herein.

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kado et al. (US 5,410,609) disclose "Apparatus for Identification of Individuals".

Gu (US 6,002,386) discloses "Automatic Contrast Control of Display Device".

Yamaguchi et al. (US 6,345,111) disclose "Multi-modal Interface Apparatus and Method"

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Po-Wei (Dennis) Chen whose telephone number is (703) 305-8365. The examiner can normally be reached on 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass can be reached on (703) 305-4717. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-6743 for regular communications and (703) 308-6743 for After Final communications.
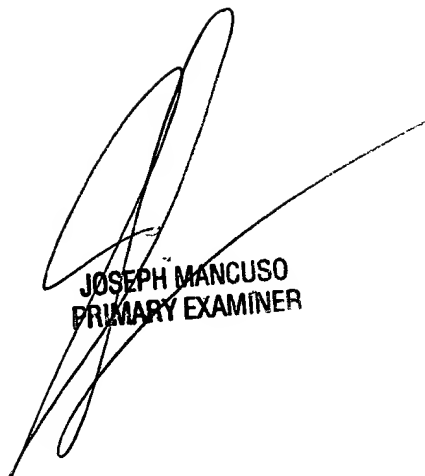
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Po-Wei (Dennis) Chen
Examiner
Art Unit 2697

Po-Wei Dennis Chen
December 20, 2002

JOSEPH MANCUSO
PRIMARY EXAMINER